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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/069,088	04/29/1998	SHENG LIANG	06502.0129-0	3016

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EXAMINER

NGUYEN, VAN H

ART UNIT PAPER NUMBER

2151

DATE MAILED: 08/15/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.  
09/069,088

Applicant(s)  
SHENG LIANG

Examiner  
VAN H. NGUYEN

Art Unit  
2151



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on May 28, 2002
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-6, 8-22, 24, and 25 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8-22, 24, and 25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_ 6) ☐ Other:

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### **DETAILED ACTION**

1. This Office Action is in response to amendment B filed on May 28, 2002. Claims 1-6, 8-22, and 24-25 remain in this application.

#### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1-6, 8-22, and 24-25 are rejected under 35 U.S.C. 102(e) as being anticipated by **Agrawal et al** (U.S. 5,768,500 - cited by the Examiner, paper#5).

**As to independent claims 1, 9, and 17**, Agrawal teaches a method for time profiling multiple threads of execution corresponding to a program (the profiling techniques will be applied

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to multithreaded programs where program behavior is highly dependent on the relative execution times of the threads; col.5, lines 17-32), comprising:

- periodically interrupting execution of all of the threads (simply interrupts the program every time N units of resource are accumulated and record the program state...be configured to sample at random intervals with mean N units; col.16, lines 28-59);
- determining whether register data corresponding to a selected thread has changed from a previous interrupt of all of the threads (The performance monitor of the present invention supports two data collection mechanisms...When system-wide profiling is enabled, each time a sampling interrupt occurs, the handler appends a brief sampled state record to a kernel profiling buffer; col.13, lines 8-64); and
- providing an indication of the change for the selected thread (Downcounter 104 includes a bit which indicates that the performance monitor system 100 generated the interrupt 130 and provides a register for clearing the interrupt...The interrupt status bits indicate which of the monitored events caused the interrupt; col.9, line 17 - col.10, line 7).

**As to dependent claims 2, 10, and 18,** Agrawal teaches accessing stored data corresponding to the selected thread; and comparing the stored data with register information stored following a previous interrupt (col.16, lines 15-41).

**As to dependent claims 3, 11, and 19,** Agrawal teaches computing a value corresponding to the stored data; and determining a relationship between the computed value and the previously stored register information (col.16, lines 15-41).

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**As to dependent claims 4, 12, and 20**, Agrawal teaches updating a memory segment to reflect that the selected thread is running when it is determined that the computed value and the previously stored register information do not match (col.5, line 55 - col.6, line 6).

**As to independent claims 5 and 21**, the rejection of claims 1, 9, and 17 above is incorporated herein in full. However, claims 5 and 21 further recite:

- computing a value based on the register data; and
- comparing the computed value with register information stored following a previous suspension of the multi-threaded program.

Agrawal teaches:

- computing a value based on the register data; and comparing the computed value with register information stored following a previous suspension of the multi-threaded program (the user can specify the value of a compare register and an interrupt is generated every time the read wait time counter reaches the compare value. The interrupt is then used by system software to record aspects of the program's state...The user programs the ranges and hardware interrupts whenever one of the ranger counters 204A, 204B reaches its compare value in comparator 205A, 205B, respectively; col.16, lines 15-41).

**As to independent claim 13**, the rejection of claims 5 and 21 above is incorporated herein in full. However, claim 13 further recites “a multi-threaded program.”

Agrawal teaches a multi-threaded program (multithreaded programs; col.5, lines 17-32).

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**As to dependent claims 6, 14, and 22**, Agrawal teaches updating the previous register information based on the computed value (col.16, lines 15-41).

**As to dependent claims 7, 15, and 23**, Agrawal teaches providing an indication corresponding to a portion of the program containing the selected thread (col.9, line 17 - col.10, line 7).

**As to independent claims 8, 16, and 24**, the rejection of claims 1, 9, and 17 above is incorporated herein in full. However, claims 8, 16, and 24 recite “recording time-profiling information for each running thread.”

Agrawal teaches recording time-profiling information for each running thread (both a memory overhead profile and an execution time profile in a single run of the program, so perturbing execution time directly impacts the profile data. Also, it is expected that the profiling techniques will be applied to multithreaded programs where program behavior is highly dependent on the relative execution times of the threads; col.5, lines 17-32).

**As to independent claim 25**, refer to claim 1 above for rejection.

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*Response to Arguments*

3. Applicants' arguments with respect to claims 1-6, 8-22, and 24-25 have been considered but are moot in view of the new ground(s) rejection.

Applicants arguments presented issued which required the Examiner to further view the previous rejection. The Examiner conducted a further search regarding the issues mentioned in Applicant's response. Therefore, all arguments regarding the cited references of the previous rejection are moot in view of the new grounds of rejection.

*Conclusion*

**Prior Art not relied upon:**

Please refer to the references listed on the attached PTO-892 which are not relied upon in the claim rejections detailed above.

**Objective - Reducing and Simplifying the areas of disagreement:**

· The Examiner solicits Applicant's cooperation in reducing and simplifying the areas of disagreement by doing the following: 1) amending the independent claims in a manner fully supported by the specification to clearly distinguish over the prior art of record, AND/OR 2) directing clear and concise arguments to the specific claim language and claim elements that Applicant believes are not fairly taught nor suggested by the cited prior art of record. Applicant should cancel claims where appropriate. Applicant should preferably avoid arguing general differences between the cited references and the instant invention as disclosed in the specification. Your cooperation is appreciated.

· M.P.E.P. 2001.06(b) Information Relating to or from Copending United States Patent Applications

The individuals covered by 37 CFR 1.56 have a duty to bring to the attention of

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the examiner, or other Office official involved with the examination of a particular application, information within their knowledge as to other copending United States applications which are "material to patentability" of the application in Question, as set forth by the Court in *Armour & Co. v. Swift & Co.*, 175 USPQ 70, 79 (7th Cir. 1972).

Format of Amended Claims pursuant to 37 C.F.R. 1.121:

37 CFR § 1.121 amendments were optional on November 7, 2000 and became mandatory on March 1, 2001.

- Please help expedite the prosecution of this application by including a clean set of all pending claims, consolidating all previous versions of pending claims from a series of separate amendments into a single clean version in a single amendment paper. This submission of a clean version of all of the pending claims will be construed as directing the cancellation of all previous versions of any pending claims. No marked-up version will be required to accompany the clean version where no changes other than the consolidation are being made. 37 CFR § 1.121.

For details of the PBG final rules please refer to the following PTO website:  
<http://www.uspto.gov/web/offices/dcom/olia/pbg/index.html>

**Please verify the CORRECT SERIAL NUMBER in all responses:**

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**Please verify your CORRECT MAILING ADDRESS:**

- If your mailing address changes after the filing of the instant application you must promptly notify the PTO of your CHANGE OF ADDRESS to prevent PTO correspondence being returned by the Post Office as undeliverable.

**How to Contact the Examiner:**

- Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Van H. Nguyen whose voice telephone number is (703) 306-5971. A voice mail service is also available at this number.



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- All responses sent by U.S. Mail should be mailed to:  
Commissioner of Patents and Trademarks  
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- Hand-delivered responses should be brought to Crystal Park Two, 2021 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist). All hand-delivered responses will be handled and entered by the docketing personnel. Please do not hand deliver responses directly to the Examiner.

**IMPORTANT CHANGE IN PTO FAX POLICY:**

- AFTER-FINAL faxes must be signed and sent to: (703) 746-7238.
- OFFICIAL faxes must be signed and sent to: (703) 746-7239.
- NON OFFICIAL faxes should not be signed, please send to: (703) 746-7240, or to Examiner Nguyen's desktop computer at 703-746-5475.

**All OFFICIAL faxes will be handled and entered by the docketing personnel. The date of entry will correspond to the actual FAX reception date unless that date is a Saturday, Sunday, or a Federal Holiday within the District of Columbia, in which case the official date of receipt will be the next business day. The application file will be promptly forwarded to the Examiner unless the application file must be sent to another area of the Office, e.g., Finance Division for fee charging, etc.**

**To avoid ongoing Washington D.C. area mail processing delays, the Examiner requests that Applicant direct all communications to the PTO by fax.** All incoming faxes are securely stored on PTO computers that are dedicated to fax reception. If you send a fax, please **do not** send duplicate papers via U.S. mail.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: (703) 305-3900.

Please direct inquiries regarding fees, paper matching, and other issues not involving the Examiner to TC 2100 CUSTOMER SERVICE: 703 306-5631.

08/11/02

Van H. Nguyen

Patent Examiner-AU#2151



ST. JOHN COURTENAY III  
PRIMARY EXAMINER